

Work Order ID 116783

April-24-14 7:39:09 AM

116783

Page 1

Item ID: D3628-1

Accept

N900040100

Setup

Start

NS1

Revision ID:

Item Name: Cupped Washer

Stop

NS2

Start Date: 4/23/14 Start Qty: 500.00

500

Cust Item ID:

Required Date: 4/23/14 Req'd Qty: 500.00

500

Customer:

Reference:

Approvals: Process Plan: MLJ

Date: 14-04-25 Tooling: _____ Date: _____

Run

Start

NR1

QC: _____

Date: _____ SPC (Y/N): _____ Date: _____

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D3628	C								

100

100

PURCHASING

Purchasing

Memo

0.00

CL 14/04/28 500

Purchasing

Issue P/O: 23958

Email or Ship DXF file to vendor

Laser Cut D3628-1 flat pattern and form as per Dwg D3628

Possible Supplier: GFI

Material release note is required

110

110

Receive & Inspect for Damage & Mat'l Certs

0.00

Packaging

Memo

0.00

Packaging

Ensure material certification is attached

14/04/28 (JW)

DQA: _____ Date: _____

Date:

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only

Work Order: _____				DISPOSITION		AGAINST DEPARTMENT/PROCESS					
				Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/>	Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/>	Water Jet <input type="checkbox"/> Prod. Eng. Coor. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/>	Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/>			
Part No. _____											
NCR No. _____											
Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector		
Design											
Doc/Data											
Equip/Tooling											
Handling/Pre											
Material											
Operator											
Offset/Setup											
Process											
Supplier											
Training											
Transport											
Unapproved											
FAULT CATEGORY											
Landing Gear			General								
Bending	Bend	Folio/Program	Outside Dimensions	Pressure/Forced							
Centre Not Concentric	BOM/Route	Grain	Over/Under tolerance	Set-up							
Cracks	Broken/Damage/Defect	Hardware	Part Incorrect	Temperature/Cure							
Crimp/Kink/Ripple/Wave	Burrs	Inspection Incomplete/Unqualified	Part Lost/Missing	Weld							
Cuffs	Contamination	Instructions Incomplete/Unclear	Part Moved	Wrong Stock Pulled							
Crushing	Countersink	Misaligned/off center	Positioned Wrong								
Heat Treat	Cut Too Short	Mislabeled	Power Loss/Surge								
Inspection Strip in Tube	Drawing	Misread									
Marks/Chatter	Drill Holes	Off-set									
Turning Sequence	Finish	Out of Calibration									
Wave/Twist in Tube	Fit/Function	Out of Sequence									

Work Order ID 116783

April-24-14 7:39:09 AM

116783

Page 2

Item ID: D3628-1

Accept

N900040100

Setup

Start

NS1

Revision ID:

Item Name: Cupped Washer

Stop

NS2

Start Date: 4/23/14 **Start Qty:** 500.00

500

Cust Item ID:

Required Date: 4/23/14 **Req'd Qty:** 500.00

500

Customer:

Reference:

Approvals:

Process Plan: ..

Date: _____

Tooling: _____

Date: _____

Run

Start

NR1

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

NR2

**Sequence ID/
Work Center ID**

**Operation
Description**

**Set Up/
Run Hours**

Tool ID

Tool #

**Plan
Code**

**Accept
Qty**

**Reject
Qty**

**Reject
Number**

**Insp.
Stamp**

120

QC6- Inspect dimensions to drawing

0.00

27

389

W

S

1

38

500

120

QC

Quality Control

130

Identify as per dwg & Stock Location: ST 063

0.00

14/06/12

DAS

130

Packaging

Packaging

Memo

0.00

32

9-09

140

QC21- Final Inspection - Work Order Release

0.00

MLJ

14-06-02

140

QC

Quality Control

Memo

0.00

MLJ 14-06-02

DQA: _____ Date: _____

Date:



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Date:

Work Order update only

Work Order: _____			DISPOSITION			AGAINST DEPARTMENT/PROCESS																																							
			Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/>	Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/>	Water Jet <input type="checkbox"/> Prod. Eng. Coor. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/>	Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/>																																						
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Picklist Print

April-24-14 7:39:12 AM

Page 1

Work Order ID: 116783

116783

Parent Item: D3628-1

D3628-1

Parent Item Name: Cupped Washer

Start Date: 4/23/14

Required Date: 4/23/14

Start Qty: 500.00

Required Qty: 500.00

Comments: IPP Rev:A New Issue 07-05-28 JLM
IPP Rev:B Removed Powder 07-07-11 JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D3628-1P		Purchased		No		110	Each	0.0000	1	500	**		<i>4/23/14 500</i>

D3628-1P

Cupped Washer

DQA: _____ Date: _____

Date:



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

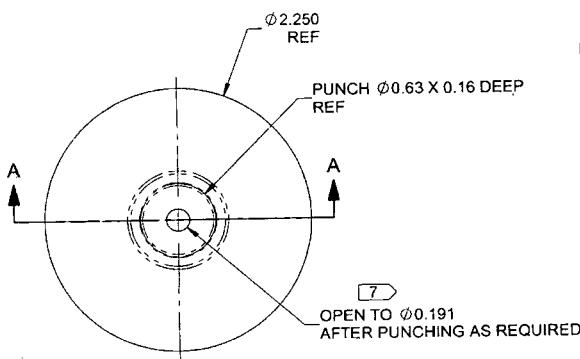
Date:

Work Order update only

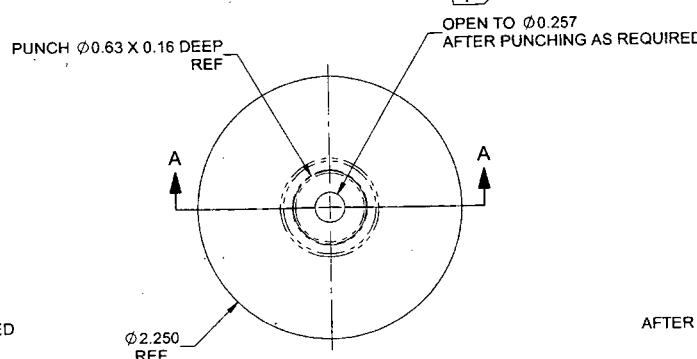
Work Order: _____			DISPOSITION			AGAINST DEPARTMENT/PROCESS																																
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8 7 6 5 4 3 2 1

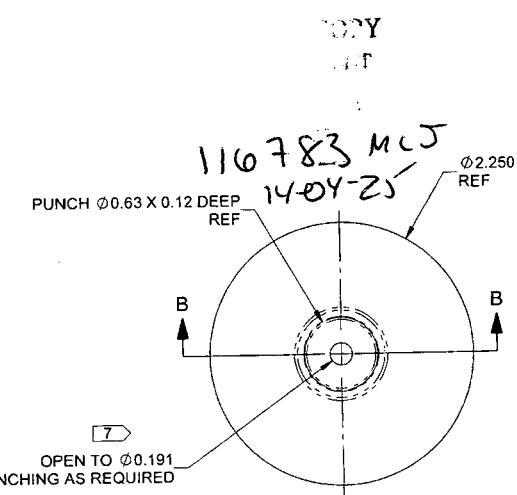
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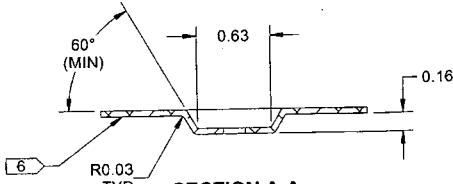
D3628-1 CUPPED WASHER



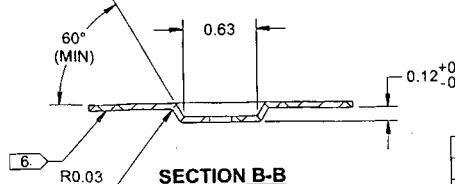
D3628-3 CUPPED WASHER



△ D3628-5 CUPPED WASHER



SECTION A-A
(D3628-1/3)



SECTION B-B
(D3628-5 ONLY)

- NOTES:
- 1) MATERIAL: MADE FROM D3628-1F
 - 2) FINISH: NONE
 - 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK ALL SHARP EDGES 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.5
 - 7) WHEN DRILLING OUT THE CENTRE HOLE AFTER PUNCHING, ENSURE THAT THE HOLE IS DRILLED CONCENTRIC TO THE 'CUPPED' AREA; WITHIN 0.03
 - 8) WEIGHT: 0.02 lbs

RELEASE
2012-05-07

C	UPDATE DWG TO CURRENT STD; ADD-5, ZN C1-1.	DC	12.04.19
B	REMOVE POWDER COAT	CB	07.07.09
A	NEW ISSUE	CB	07.06.08
REV.	DESCRIPTION		
DESIGN	<i>DC</i>	DART AEROSPACE LTD	
DRAWN	<i>DC</i>	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>EZ</i>	DRAWING NO.	REV. C
MFG. APPR.	<i>EZ</i>	D3628	SHEET 1 OF 2
APPROVED	<i>NO</i>	TITLE	SCALE
DE APPR.	<i>#</i>	CUPPED WASHER	NTS
DATE	12.04.19	COPYRIGHT © 2007 BY DART AEROSPACE LTD. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR REPRODUCED IN WHOLE OR IN PART WITHOUT PERMISSION FROM DART AEROSPACE LTD.	

8 7 6 5 4 3 2 1

D

D

C

C

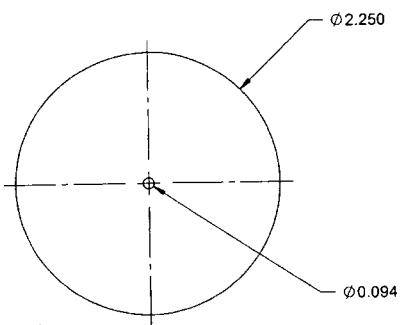
B

B

A

A

0.050
REF



D3628-1F FLAT PATTERN

RELEASED
R 2012-05-07
MP

- NOTES:
1) MATERIAL: AISI 304/316 STAINLESS STEEL SHEET, 18 GAUGE (0.050 THICK)
ANNEALED, 2B FINISH
PER MIL-S-5059 OR AMS 5513 (304) OR AMS 5524 (316) OR ASTM A240 OR ASME SA240
REF DART SPEC M304S18GA
2) FINISH: NONE
3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
4) ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED
5) BREAK ALL SHARP EDGES 0.005 TO 0.010 MAX
6) IDENTIFICATION: NONE
7) WEIGHT: 0.02 lbs

8 7 6 5 4 3 2 1

DESIGN	SC	DART AEROSPACE LTD	
DRAWN	SC	HAWKESBURY, ONTARIO, CANADA	
CHECKED	EE	DRAWING NO.	REV. C
MFG. APPR.	EZ	D3628	SHEET 2 OF 2
APPROVED	10	TITLE	SCALE
DE APPR.	MM	CUPPED WASHER	NTS
DATE	12.04.19	COPYRIGHT © 2007 BY DART AEROSPACE LTD. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS FOR THE USE OF THE INDIVIDUAL OR ORGANIZATION THAT RECEIVED IT. IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO23958**

Purchase Order Date 4/28/2014

PO Print Date 4/28/2014

Page Number 1 of 2

Order From : VC-GFI001

GFI
180 AVENUE LABROSSE
POINTE CLAIRE, QC H9R 1A1
CA

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

FAXED
FC 21/04/2014

Contact Name	Buyer	Chantal Lavoie
Vendor Phone	Customer POID	
	Customer Tax #	10127-2607
Ship To Contact	Terms	Net 30
Ship To Phone	Currency	CAD
Ship Via:	FOB	FCA - (Free Carrier)
Ship Acct:		

Line Nbr	Reference Vendor Part Number	Description/ Mfg ID	Req Date/ Taxable	CD Promise Date	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
1	D3628-1P	Cupped Washer	5/16/2014 Yes	5/16/2014 21	500.00 Each	\$2.42	\$1,208.00
	AS PER DWG D3628 REV. C B116783					Line Total:	\$1,208.00
2	71401-45	PROCUREMENT QUALITY CLAUSES	5/16/2014 No	5/16/2014 21	1.00	\$0.00	\$0.00
	PROCUREMENT QUALITY CLAUSES A005 RIGHT OF ENTRY A008 FIRST ARTICLE INSPECTION (FAI) BY SELLER, (DOCUMENTATION SENT TO DART AEROSPACE) A012 CHEMICAL AND PHYSICAL TEST REPORTS A016 PERSONNEL QUALIFICATION A017 RAW MATERIAL IDENTIFICATION (AS APPLICABLE) A026 CERTIFICATION OF MATERIAL CONFORMANCE A041 QUALITY MANAGEMENT SYSTEM A042 DART NOTIFICATION BY SUPPLIER A043 RETENTION OF QUALITY DOCUMENT						

Note:



180 AVENUE LABROSSE
POINTE-CLAIRE, QC, CANADA H9R 1A1
TÉL.: (514) 630-4877 - FAX: (514) 630-4849

GFI est une division de Thomas & Betts Limitée / GFI is a division of Thomas & Betts Limited



BON DE LIVRAISON / SHIPPING MEMO

DATE DE LIVRAISON / SHIPPING DATE	N° DE BON DE LIVRAISON / SHIPPING MEMO NO.	PAGE
DAY	MO.	YR.
23	05	14
	0537756	1/1



VENDU À / SOLD TO

DART AEROSPACE LTD
1270 ABERDEEN ST.
HAWKESBURY, ON
K6A 1K7

EXPÉDIÉ À / SHIP TO

DART AEROSPACE LTD
1270 ABERDEEN ST.
HAWKESBURY, ON
K6A 1K7

CODE DE CLIENT CUSTOMER CODE	N° DE CONTRAT JOB NO.	VOTRE N° DE COMMANDE YOUR PURCHASE ORDER NO.	EXPÉDIE PAR SHIP VIA
DART	GFI-0299	0285434	PO23958

QUANTITÉ QUANTITY	N° DE PIÈCE PART NO.	DESCRIPTION
500	D3628-1P	CUPPED WASHER ITEM 1 C OF C REQ'D MFG. JOB# <u>J0285434-001</u> QTY <u>500</u> PCS DUE DATE: <u>21 May 2014</u>

EXPEDITEUR
SHIPPER

REÇU PAR / RECEIVED BY

DATE

TOUTES LES RÉCLAMATIONS DOIVENT ÊTRE FAITES EN DEDANS DE 5 JOURS DE LA RÉCEPTION.
ALL CLAIMS MUST BE MADE WITHIN 5 DAYS OF RECEIPT OF GOODS.

CERTIFICATE OF COMPLIANCE

CERTIFICAT DE CONFORMITE



Membre de / A Member of **Thomas & Betts**

180 LABROSSE AVENUE
POINTE CLAIRE, QC
H9R 1A1

DART AEROSPACE LTD
1270 ABERDEEN ST.
HAWKESBURY, ON K6A 1K7

CERTIFICATE NO.	12	OUR JOB NO	J0285434	SHIPPING MEMO	0537756	
ITEM	QUANTITY	PURCHASE ORDER	PART NUMBER	REV	NAME	DWG ISSUE
--	500 PCS	PO23958	D3628-1P	C	CUPPED WASHER	C
MATERIAL		SUPPLIED BY		MAT. REL. NO.		
AMS 5513 304 ANN		TW METALS / NORTH AMERICAN STAINLESS		H/N L2T8		

	PROCESS	PROCESSOR	RELEASE NOTE #
1	FIRST ARTICLE INSPECTION REPORT ON FILE	GFI	N/A
2	REF. GFI MANUFACTURING JOB NUMBER J0285434-001 (500 PCS)		
3			
4			
5			
6			
7			
8			
9			

WE HEREBY CERTIFY ALL THE PARTS COVERED BY THIS CERTIFICATE HAVE BEEN MANUFACTURED FROM MATERIAL SUPPLIED ON RELEASE NOTE SHOWN ABOVE AND THAT ALL PARTS HAVE BEEN INDIVIDUALLY INSPECTED AND CONFORM TO THE DRAWINGS AND PURCHASE ORDER REFERENCED ABOVE.

DATE 23 MAY 2013

G.F.I. Q.C. REP.



O'Neal High-Performance Metals Group

235 TUBEWAY
CAROL STREAM IL 60188
Tel: 630-690-0110
FAX: 16306902105

CERTIFICATE OF COMPLIANCE

Your Order Number: 0084163

Our delivery receipt Number: 80634167

Date: 5/21/14

This is to certify that the material shipped against the above order on the above delivery receipt, consisting of:

Quantity: 64.512 LB

Line Number: 1 Grade: 304-2B S/S SHEET .048

Part #: TS05048X964A

Heat Number: L2T8

Specification: _____

Complies in all respects with the item description.



BY:

Janice Clark

Authorized Test Department Clerk



NORTH AMERICAN
STAINLESS

METALLURGICAL TEST REPORT

6870 Highway 42 East
Ghent, KY 41045-9615
(502) 347-6000

Certificate: 923703 03 Mail To:
PHOENIX METALS COMPANY
P.O. BOX 805
4685 BUFORD HIGHWAY
NORCROSS, GA 30091

Customer: 0305 001

Ship To:
PHOENIX METALS COMPANY
P.O. BOX 805
4685 BUFORD HIGHWAY
NORCROSS, GA 30091

Date: 2/27/2014 Page: 1
Steel: 304
Finish: 2B

Your Order: 189666

NAS Order: AN 0610194 01

Corrosion: ASTM A262/10 A; 180 Bend-OK

PRODUCT DESCRIPTION:

STAINLESS STEEL COIL, C.R. ANNEALED & PICKLED; UNS 30400
ASTM A240/13a, A4666/13, ASME SA240/13, SA480/13, SA666/13
CHEM ONLY ON FOLLOWING ASTM: A276/13, A479/13a, A484/13a, A312/13
CHEM ONLY ON FOLLOWING ASME: SA312/13, SA479/13
AMS 5513J XMRK; MIL-S-5059D AMEND3 (X CROWN MEAS)
NACE MR0175/ISO 15156-3:2003 A, MR0103/07; QQS766D-A X MAG PERM
MIN. SOLUTION ANNEAL TEMP 1900F, WATER QUENCHED

REMARKS:

Mat'l is Free of Mercury Contamination. No weld repairs.
EN 10204:2004 3.1; RoHS 1 & 2 Compliant
Material is Free of Radioactive Contamination
NAS Steel Making Process: EAF, AOD, & Cont. Casting
Product Mfg. by a Quality Mgt. Sys. in Conf. w/ISO 9001
*Melted & Manufactured in the USA; Mat'l is DFARs Compliant

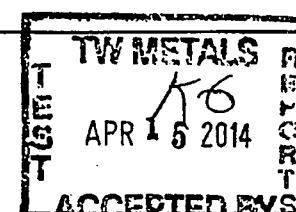
Product ID #	Coil #	Thickness	Width	Weight	Length	Mark	Pieces	COMMODITY CODE
04L2T8 B	* 04L2T8 B	.0460	48.0000	13,500	COIL	1787.7	11	1 3468

CHEMICAL ANALYSIS CM(Country of Melt) ES(Spain) US(United States) ZA(South Africa) JP(Japan) Chemical analysis per ASTM A751/08

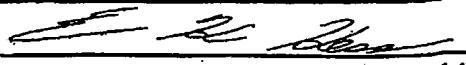
HEAT	CM	C %	CR %	CU %	MN %	MO %	N %	Ni %	P %	S %
L2T8	US	.0241	18.1830	.4295	1.8450	.3115	.0788	8.0285	.0315	.0010
SI %										
.3020										

MECHANICAL PROPERTIES

Product ID #	Coil #	F T	UTS ksi	0.2% YS ksi	Elong % -2"	Hard RB	Tail Hard
04L2T8 B	04L2T8 B	90.65	42.44	57.72	82.00	84.00	




NAS hereby certifies that the analysis on this certification is correct. Based upon the results and the accuracy of the test methods used, the material meets the specifications stated. These results relate only to the items tested and this report cannot be reproduced, except in its entirety, without the written approval of NAS.

Technical Dept. Mgr. 
ERIC HESS

2/27/2014